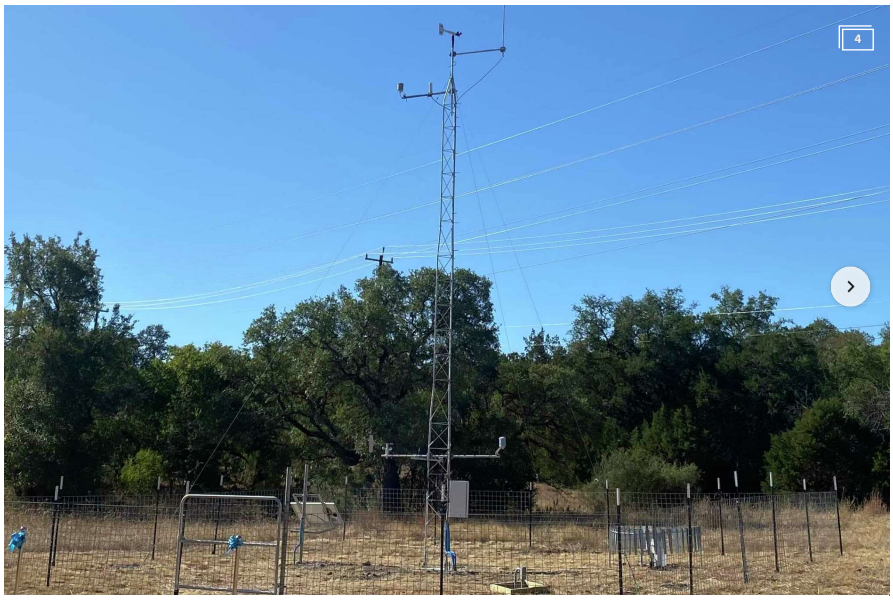
EDWARDS AQUIFER AUTHORITY

'Piece of the puzzle': State's weather network grows with San Antonio data station

The weather station transmits real-time data on temperature, precipitation and other metrics.

Liz Teitz
Aug. 18, 2023



1 of 4

The Texas Water Development Board installed its 100th TexMesonet weather station at the Edwards Aquifer Authority's Field Research Park in San Antonio. The station collects temperature, soil moisture, precipitation and other weather and hydrological data.

Liz Teitz

As the sun beat down on a parched field on the north side of San Antonio, the group of people gathered to celebrate the opening of a new weather data collection station commiserated about the heat, and spoke optimistically about the next chance of rain.

About 30 feet above their heads, weather instruments were measuring exactly how hot it was, while other tools were tracking wind direction and wind speed, humidity, barometric pressure and solar radiation. Two rain gauges and a sensor to measure soil moisture at three depths are also ready and waiting to measure and report precipitation.

The instruments are part of a new TexMesonet Weather Station at the Edwards Aquifer Authority's Field Research Park, which was installed this week. The station is the 100th installed by the Texas Water Development Board, the state agency tasked with implementing water policy objectives and planning.

READ MORE: 'Faucet got turned off': Hill Country lakes, streams struggling as drought drags on

The TexMesonet is made up of stations around the state that transmit weather and water data in real-time. The "mesoscale network" system is broader than a local scale, like having a rain gauge in every backyard, but dense enough to identify small-cell storms and systems that wouldn't be caught by a sparser network, manager Nathan Leber said. The data can be used individually, by someone looking for rainfall rates or humidity at a specific place at one time, or collectively, to shape forecasts and get broader information about climates.

That data is available to anyone at TexMesonet.org— from emergency managers who need to know what's happening right now to researchers who want to study longer trends, or ranchers who want information about soil moisture and residents who simply want accurate weather information for their area.

Having high-quality, standardized data from across the state helps the Texas Water Development Board with both short- and long-term forecasts, Leber said.

"It's really helping us understand the connection between weather and our water resources," Leber said. In a storm, knowing the level of moisture in soil is key to knowing what runoff might be, and having data on trends helps with planning for water resources over the next 50 to 70 years, he said.

The monitoring effort grew out of the effect of devastating 2015 floods that did damage in Blanco, Wimberley and other parts of the Hill Country, said Jeff Walker, the water board's executive administrator

"We found out that, while floods were coming down in Blanco and Wimberley, there was no weather stations upstream," he said.

SEE MORE: Mapping San Antonio's drought

That made it clear that a more comprehensive system of data collection was needed. Since 2016, the Texas Water Development Board has added 100 stations, in addition to about 3,000 partner stations that report data to the network.

"Covering the state is our goal and this is another piece of the puzzle," Walker said.

Many weather stations around the state are clustered in high population areas, Leber said, such as Federal Aviation Administration stations at airports, "so we look to fill in the gaps" where there isn't coverage or where there are specific conditions the water board wants to monitor.

The water board partnered with the Edwards Aquifer Authority, the groundwater conservation district that manages the Edwards Aquifer, to place the new station in its research park, which covers about 150 acres off Evans Road in San Antonio.

BUSINESS NEWS

BUSINESS
UTSA's stem cell research is cutting edge — and out of...

BUSINESS
Artificial intelligence plays increasing role in S.A....

BUSINESS
CPS Energy offers perks for seniors on bills and late fees

BUSINESS
Texas counties lack power to ban solar farms, state AG finds

BUSINESS
TikTok of 'very Buc-ee's birthday party' goes viral

The aquifer authority uses the property for data collection and research on land management practices, which it hopes to apply across the aquifer's watershed, general manager Roland Ruiz said.

"Data collection is key to all of that," he said. "Science feeds good policy, science feeds good practices and science feeds the best planning for the future."

READ MORE: How do scientists measure the Edwards Aquifer?

The aquifer authority has its own data collection stations, and has been providing that information to the state water board's network for years, data management director Bryan Anderson said. But the new Mesonet station is more sensitive and accurate, he said.

That includes using soil moisture measurements to study aquifer recharge, Anderson said, as well as gathering data on how weather conditions affect ground moisture.

The goal is to continue expanding the system, with more stations in West Texas, said Texas Water Development Board chairwoman Brooke Paup.

Written By
Liz Teitz

Reach Liz on

Liz Teitz was formerly a fellow with Hearst Connecticut Media Group, covering higher education and politics. She previously covered education and news in Texas for the San Antonio Express-News and the Beaumont Enterprise. She grew up in Rhode Island, and graduated from Georgetown University. Email Liz at Liz.Teitz@express-news.net.

VIEW COMMENTS

LOCAL

Electric vehicle owners soon must pay extra $200 for registration
BY SHEPARD PRICE

Hays County creates online portal for tracking crime, arrests
BY BARRY L. HARRELL

New Braunfels teenager drowns in Comal River
BY LIZ TEITZ

SA Philharmonic opens offices, rehearsal space on West Side
BY ELAINE AYALA

Police release video of suspect in River Walk shooting

When the shooting occurred, the Alamo Bowl had ended, and spectators were walking away from the Alamodome.

BY JACOB BELTRAN